

differential pressure to force the blank into contact with the mold (i.e. pressure or a combination of pressure and vacuum). The hot plastic blank 52 is pulled in contact and held against the surface of the mold 58. The plastic cools to form the mat 73 shown in Fig. 6. Then, the mats 73 are removed from the mold. If necessary, the outer periphery of the mats may be trimmed to conform the mat to the shape of the vehicle surface to be covered.--

Please replace the paragraph beginning at page 9, line 6 and ending at page 9, line 10 with the following rewritten paragraph:

-- In the preferred embodiment, the mat 73 has a relatively flat base 74 and a number of upstanding sidewalls 76 shaped by the upstanding form 66 and against ledge 68. As mentioned before, this shape is merely illustrative of a typical driver or passenger side floor board, and a number of differently shaped mats, such as cargo liners, may be formed according to this inventive process.--

In the Claims

Please delete claim 21 without prejudice or disclaimer.

Please amend claim 4 as follows:

4. (Amended) The method of claim 1, wherein least one vacuum aperture is formed in said tool, and wherein said sheet is drawn toward said tool by applying vacuum pressure through said vacuum aperture.

Remarks

Reconsideration of the application is requested. The specification has been amended for the purpose of clarity and not for reasons related to patentability. In addition, claim 4 has been amended and claim 21 has been deleted. No new matter has been added. Claims 1-20 are pending in the present application.

In accordance with 37 C.F.R. § 1.121(b)(3), Applicant hereby requests approval by the Examiner for the proposed drawing amendment to Figs. 1, 5 and 6. As required, new sheets of drawings are enclosed with the amendments to Figs. 1, 5 and 6 marked in red ink. The proposed drawing change has been submitted to provide consistency between the drawings and specification and not for reasons related to patentability.

Claim 21 stands rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which is most nearly connected, to make and/or use the invention. Claim 21 has been deleted, therefore the rejection based upon 35 U.S.C. § 112, first paragraph, is moot.

Claims 1-8 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, claim 4 was rejected because "said vacuum pressure" lacks proper antecedent basis in the claim. Applicant has amended claim 4 and submits that claim 4 particularly points out and distinctly claims the subject matter which Applicant regards as his invention.. As for claims 1-3 and 5-8, the Applicant has particularly pointed out and distinctly claimed the subject matter which applicant regards as his invention. Thus, Applicant respectfully requests that the rejection of claims 1-8 based on 35 U.S.C. § 112, second paragraph, be withdrawn.

Claim 21 was rejected because the phrase "a first side of the sheet" is indefinite because it is unclear whether or not the first side is the same side first side as mentioned in claim 13. As stated above, claim 21 has been deleted, therefore the rejection based on indefiniteness is moot.

Claims 1-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S.

Patent No. 5,171,619 to Reuben (hereinafter "the Reuben reference") in view of U.S. Patent No. 2,915,427 to Schriner et al. (hereinafter "the Schriner reference"). Applicant respectfully traverses this rejection.

Applicant submits that independent claims 1, 9 and 13 are not obvious over the Reuben reference in view of the Schriner reference. In fact, Applicant respectfully submits that a prima facie case of obviousness for rejecting claims 1-20 has not been established. The Patent and Trademark Office's burden of establishing a prima facie case of obviousness is not met unless "the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Bell, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993) (quoting In re Rinehart, 189 U.S.P.Q. 143, 147 (C.C.P.A. 1976)). None of the cited references teaches or suggests Applicant's claimed invention. In addition, the pending claims have been rejected on an improper combination of references which fail to teach or suggest the claimed invention.

As admitted by the Examiner in the Office Action, the Reuben reference does not teach or suggest locating a sheet of thermoplastic nibbed material in proximity with a contoured molding tool, the first side of the sheet directed toward the tool and a second side of the sheet directed away from the tool; heating the sheet; and drawing the sheet toward the tool until the sheet is substantially shaped to the contour of the tool. The Schriner reference fails to add anything to the Reuben reference except to provide for a method for curing a rubber mat to a piece of contoured textile fabric. As with the Reuben reference, the Schriner reference fails to teach, suggest or make any reference to any type of method for contouring a thermoplastic nibbed material by placing such material in proximity with a contoured molding tool, thereby failing to teach all of the limitations included in claims 1, 9 and 13.

Furthermore, claims 1, 9 and 13 are not obvious in light of Reuben and Schrinier because the Reuben and Schrinier references are not properly combinable to teach or suggest the limitations included in claims 1, 9 and 13. "There is no suggestion to combine . . . if a reference teaches away from its combination with another source." Tec Air Inc. v. Denso Mfg. Mich. Inc., 52 U.S.P.Q.2d 1294, 1298 (Fed. Cir. 1999). "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant . . . [or] if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant." Id. (quoting In re Gurley, 31 U.S.P.Q. 1130, 1131 (Fed. Cir. 1994).

The Examiner stated that it would have been obvious to one of ordinary skill in the art at the time the invention was made to shape the mat of Reuben by the process of Schrinier in order to give the mat of Reuben a desired contour for vehicles. To the contrary, Applicant submits that the Schrinier reference teaches away from shaping the mat disclosed in the Reuben reference by the method disclosed in Schrinier. If a mat was constructed in accordance with the Reuben reference and needed to be contoured to a specific shape, a person of ordinary skill in the art would be discouraged from using the method disclosed in Schrinier. Schrinier requires loop or cut pile fabrics to be woven or knit to a sized backing having sufficient stretchability in all directions (col. 3, lines 17-19) so that the carpet or other fabric web material may be stretched to conform to the contour (col. 4, lines 31-31). The mat in Reuben does not have pile yarns that are woven on a backing that has sufficient stretchability in all directions other than a primary backing. Instead, Reuben includes pile yarns 27 coupled to the primary backing 25 through the use of an adhesive coating 29. The Schrinier reference

goes on to state that if the fabric were preliminarily bonded to the uncured rubber blank, stretching of the fabric to conform to the mold contour would be very slight and the results quite unsatisfactory if the method disclosed in Schriener is used (col. 3, lines 8-11). Clearly, a person skill in the art would not take a mat constructed in accordance with Reuben and implement the method of Schriener in view of the teachings of Schriener that states an attempt to contour the mat would be ineffective.

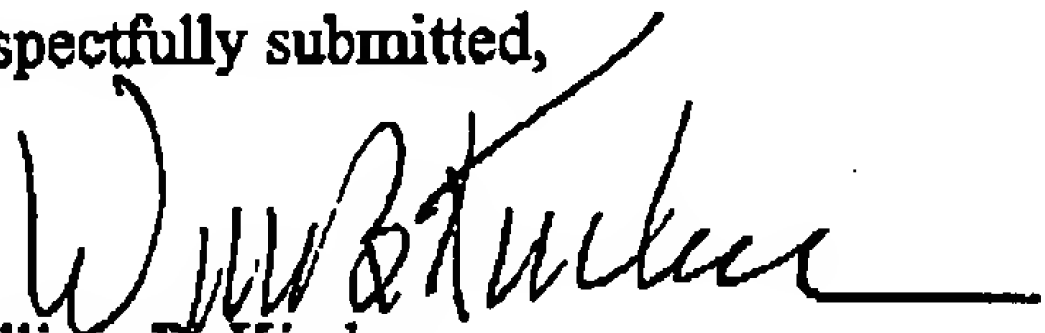
Furthermore, one skilled in the art would be discouraged from using a mat constructed in accordance with the Reuben reference to achieve the desired results set forth in Schriener. The mat in Reuben includes a polyurethane foam layer that forms the back portion of the mat. One of the objects of the Schriener reference is to provide a rubber backed contoured carpet without seams slits or wrinkles and without undue stresses and splitting in the cheap reclaim rubber back (Col. 4, lines 20-23). If the mat in the Reuben reference was molded in accordance with the method disclosed in Schriener, the polyurethane foam layer may crack or split when the mat is placed over the crest portions of the contoured mold. Further, the polyurethane foam could bunch up in the trough portions of the contoured mat and cause wrinkles in the carpet. Using a mat constructed in accordance with the Reuben reference would be unproductive in achieving the desired results set forth in the Schriener reference. Thus, the Schriener references teaches away from using a mat constructed in accordance with the Reuben reference and the references are not combinable with each other.

For the foregoing reasons, Applicant respectfully requested that claims 1, 9 and 13 be allowed. Since claims 2-8, 10-12 and 14-20 depend either directly or indirectly from claims 1, 9 and 13 respectively, Applicant submits that these claims are also in condition for allowance for at least the above cited reasons.

Claims 1-20 are thus believed to be novel and non-obvious in view of the prior art.

Accordingly, Applicant respectfully submits that the application as amended is in condition for allowance and such favorable action is respectfully requested. If the Examiner believes that a telephone interview would facilitate resolution of any outstanding issues, he is encouraged to contact the undersigned at the number indicated below.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please make the below-indicated amendments to the specification. Material enclosed by brackets is to be removed and material which is underlined is to be added.

In the Specification

Please replace the paragraph beginning at page 8, line 6 and ending at page 8, line 19 with the following rewritten paragraph:

-- With reference now Figs. 1 and 5, the thermoforming component of the vehicle mat production line 10 is shown. The thermoforming station 20 generally includes a loading station [54] 55, an oven 56 and a mold 58 located within the oven 56. The blanks 52 are placed on the conventional loading station 54 and transported into the oven 56. In the novel method of the present invention, the mat blank 52 is loaded on the loading station 54 so that smooth (or slightly textured) side 60 is directed toward the mold 58 and the nibbed side 62 is directed in the direction opposite the mold. Next, the mat blank 52 is placed directly over the mold 58. The mold 58 is preferably a male tool contoured to shape the vehicle surface to be covered by the mat. The mold 58 has a block-like base 64, an upstanding form 66 on the upper surface of the base 64 and a flat peripheral ledge 68 between the outer edge of the form 66 and the edge of the base 64. In the preferred embodiment, the form 66 includes upwardly extending sidewalls 70 and a top [72] 71. As would be understood, the form 66 may take any of a wide variety of complex shapes have a plurality of curved, flat and transitional surfaces typical of the interior floorboards of passenger vehicles, and cargo areas of a variety of trucks, vans and sport utility vehicles.--

Please replace the paragraph beginning at page 8, line 20 and ending at page 9, line 5 with the following rewritten paragraph:

-- The mold 58 includes a plurality of vacuum apertures [70] 72 formed thereon. To form the mat blank 52 into the formed mat [72] 73, the blank 52 is heated by the oven 56 and the negative vacuum pressure applied through vacuum apertures [70] 72 draws the blank toward the mold 58. While the preferred embodiment relies solely on vacuum pressure, the inventive technique also contemplates methods

of utilizing differential pressure to force the blank into contact with the mold (i.e pressure or a combination of pressure and vacuum). The hot plastic blank 52 is pulled in contact and held against the surface of the mold 58. The plastic cools to form the mat [72] 73 shown in Fig. 6. Then, the mats [72] 73 are removed from the mold. If necessary, the outer periphery of the mats may be trimmed to confirm the mat to the shape of the vehicle surface to be covered.--

Please replace the paragraph beginning at page 9, line 6 and ending at page 9, line 10 with the following rewritten paragraph:

-- In the preferred embodiment, the mat [72] 73 has a relatively flat base 74 and a number of upstanding sidewalls 76 shaped by the upstanding form 66 and against ledge 68. As mentioned before, this shape is merely illustrative of a typical driver or passenger side floor board, and a number of differently shaped mats, such as cargo liners, may be formed according to this inventive process.--

In the Claims

Please delete claim 21 without prejudice or disclaimer.

4. (Amended) The method of claim 1, wherein [said vacuum pressure is applied through vacuum apertures in said tool] at least one vacuum aperture is formed in said tool, and wherein said sheet is drawn toward said tool by applying vacuum pressure through said vacuum aperture.